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means, with a desire to afforest parts of the island, imported from England 9,000 seedling Larches, and from Illinois 30,000 Scotch Firs, and planted them upon twenty acres of land. After I wrote for information, Mr. Coffin visited the planted tract and made a thorough search; in that exploration he discovered twenty patches in which the *Erica* was growing; it was about evenly distributed over the whole tract, and was as abundant among the Firs brought from Illinois as among the Larches from England.

The seed of the *Erica* is so well protected that it will endure much exposure; this fact favors a theory that the plant has been introduced by man's agency, and that it has either been brought by settlers as an ornamental plant, and escaped from cultivation, or has been sown by seeds brought on in seed-grain, or among the roots of trees.

But in opposition to this theory, it has never been found in the vicinity of dwellings, nor near cultivated grounds.

O. R. WILLIS.

Unusual Leaf-Forms in *Platanus occidentalis*.

I send some leaf specimens taken from a Plane tree near Houston. Compared with the usual form of the leaf, most of the leaves on this particular tree are but slightly toothed, while a large proportion are only pointed at the three lobes—the rest of the margin entire. Has this peculiar sport of the Plane been noticed before? It is another instance of the diversity in the form and outline of leaves belonging to a single species.

As this Plane (*P. occidentalis*) is easily propagated by cuttings (more readily than its oriental kin) there is reason to believe that a fixed variety can be secured.

G. C. NEALLEY.

Index to Recent American Botanical Literature.

Agaricus campestris. Worthington G. Smith. (Gard. Chron., xxvi., pp. 492, 493; two figures.)

A popular account of the field mushroom, with excellent illustrations of its structure and appearance.

Beginnings of Natural History in America. G. Brown Goode. (Proc. Biol. Soc. Washington, iii., pp. 35-105; reprinted.)

This paper is the presidential address delivered at the sixth

annual meeting of the Biological Society of Washington. Dr. Goode traces the early history of zoological and botanical science in America. The earliest English naturalist on our shores was Thomas Harriott, who was the mathematical instructor of Sir Walter Raleigh, and who was landed on Roanoke Island, Aug. 17, 1585. He was preceded, however, by the Spaniard, Gonzalo Fernandez de Oviedo y Valdes, who visited Santo Domingo in 1514, and was subsequently governor of that island, and also by Jean de Lery, a member of the Huguenot colony established in 1555 on an island in the bay of Rio de Janeiro, and by José d'Acosta, a missionary, who travelled in Peru from 1571-1588. It is a valuable contribution to the history of American science.

Brodiaea Douglasii. J. G. Baker. (Bot. Mag., plate 6,907.)

A beautiful illustration of one of the finest species of the genus, drawn from a plant which flowered at Kew in May from a bulb sent by Mr. Pringle.

Caltha palustris, L.—*Versuch einer Gliederung des Formenkreises der*. Günther Beck. (Verhandl. K. K. zool. bot. Gesellsch. Wien, xxxvi., pp. 347-353.)

Being occupied with a review of the forms of *Caltha* hitherto found in Austria, Dr. Beck has extended his studies of this plant, in order to bring together all the described forms. Four European and Asiatic species and their varieties are first considered, and seven varieties of the Linnæan *C. palustris* are then noted; these he divides into two sections, (a) sepals large, 1 to 2 cm. long, and (b) sepals small, narrow, about 1 cm. long. In the first section he places var. *typica*, var. *integerrima* (*C. integerrima*, Pursh) and var. *parnassifolia* (*C. parnassifolia*, Raf.), all of which are credited to North America; in section (b) we find var. *minor*, (*C. minor*, Miller) and var. *asarifolia* (*C. asarifolia*, DC.) credited to North America, and two other Asiatic and European varieties. *C. flabellifolia*, Pursh, *C. arctica*, R. Br., and *C. biflora*, DC., are excluded by Dr. Beck.

Darlingtonia Californica. (West American Scientist, ii., pp. 91, 92; one figure.)

The habitat of this interesting plant is "in mountain swamps and along the borders of brooks, at an elevation of from 1,000 to 6,000 feet, from Truckee Pass to the borders of Oregon."

Fertilization of Cassia Marilandica. Thomas Meehan. (Proc. Phil. Acad. Nat. Sci., 1886, pp. 314-318.)

An interesting study, in which reference is made to Mr. Leggett's notes in early numbers of the BULLETIN. Mr. Meehan observed that as soon as the flowers open they are freely visited by bumble bees, which alight on the anthers of the long lower stamens, using these as a platform, and then open the pores at the apices of the anthers of the four shorter stamens, and empty them of pollen. He thinks that these pores are covered by membranes and are never ruptured except by insect agency. A gauze bag was placed over a panicle of the flowers, completely protecting them from the bees, and not one of the blossoms so enclosed produced a pod. Mr. Meehan was unable to ascertain that the anthers of this species ultimately split longitudinally, as Dr. Torrey believed happened with those of *C. nictitans*.

Florida Fungi.—Notes on. W. W. Calkins. (Journ. Mycol., ii., pp. 126-128.)

This is Mr. Calkins' ninth contribution, and brings the number of species noted up to 136.

Fungi.—New. J. B. Ellis and Geo. Martin. (Journ. Mycol., ii., pp. 128-130.)

Eleven new species are characterized.

Grasses of the Arid Districts of Kansas, Nebraska and Colorado —An Investigation of the. Dr. George Vasey. (Dept. Agric., Botanical Division, Bulletin No. 1, p. 18, 13 plates; Washington, 1886.)

The most important pasture grasses of the region are the "Gramma Grass" (*Bouteloua oligostachya*) and the "Buffalo Grass" (*Buchloe dactyloides*); Dr. Vasey estimates that they together form 75-90 per cent. of the whole grass product; numerous other species are found, however, and among these *Andropogon provincialis*, *A. scoparius*, *Panicum virgatum*, *Distichlis maritima*, *Chrysopogon nutans*, *Koeleria cristata*, *Muhlenbergia glomerata*, *Hilaria Jamesii*, *Sporobolus cryptandrus*, *S. airoides* and *Elymus Canadensis* are noted and illustrated. *Hickory Nuts of North America.* Joseph F. James. (Pop. Sci. Month., xxx., pp. 70-78; illustrated.)

An attempt to trace the genealogy of all our species of *Carya*.

Lastarriæa, Remy.—*Confirmation of the Genus with Character extended.* C. C. Parry. (Proc. Davenp. Acad. Nat. Sci., v., pp. 35, 36; reprinted.)

Chorizanthe Lastarriæa, Parry, is *L. Chilensis*, Remy, and two new species from Chili are described.

Lilium tigridum.—*Notes on.* Thos. Meehan. (Proc. Phil. Acad. Nat. Sci., 1886, pp. 297, 298.)

Orthotrichia.—*A new Genus of Myxomycetes.* Harold Wingate. (Journ. Mycol., ii., pp. 125, 126; one figure of *O. microcephala*, Wingate.)

Paspali of Le Conte's Monograph.—*Notes on.* Dr. George Vasey. (Proc. Phil. Acad. Nat. Sci., 1886, pp. 284-290.)

This monograph was published in 1820 in Vol. 91 of the Journal de Physique. Dr. Vasey has critically examined all of Major Le Conte's specimens contained in the Herbarium of the Philadelphia Academy, and gives us the results of his studies in this valuable paper. His final revision of the genus may be found in the September number of this BULLETIN.

Pear Blight.—*History and Biology of.* J. C. Arthur. (Proc. Phil. Acad. Nat. Sci., 1886, pp. 322-336+; one plate.)

This paper is a resume of the investigations conducted by Dr. Arthur and others on the disease caused by the *Micrococcus amylovorus*, Burrill.

Pollen in the Flowers of Indigofera.—*On Projection of.* Thomas Meehan. (Proc. Phil. Acad. Nat. Sci., 1886, pp. 292-294.)

Polyembryony.—D. P. Penhallow. (Can. Rec. Sci., ii., p. 177.)

Mr. Penhallow records the frequency of this phenomenon in the seeds of the Tangierine orange. Among 38 seeds, only six produced single plants, while 19 produced two plants, nine three plants, and from four seeds four seedlings each originated.

Pyrola rotundifolia. (Garden, xxx., p. 429; illustrated.)

Quercus dentata.—*Note on.* Thomas Meehan. (Proc. Phil. Acad. Nat. Sci., 1886, pp. 280, 281; three figures.)

Mr. Meehan exhibited to the Philadelphia Academy specimens of this Japanese oak, with pistillate flowers, which, like those of our annual-fruited species, are borne at the ends of the new growth, in pairs, on short peduncles. The tree was raised from an acorn, and is now about ten years old. In DeCandolle's Pro-

dromus it is stated that its fruit was unknown at the time that volume was issued,

Rhus Toxicodendron. (Gard. Chron., xxvi., p. 502 and p. 598.)

Our poison ivy is grown in English nurseries under the name *Ampelopsis Japonica*, and its dangerous character seems to be doubted by contributors to the Gardener's Chronicle, though the editors try to impress on them the chance of serious consequences if the leaves or shoots are handled. The glorious autumn coloration of its foliage is much admired in England, where the native shrubs are in general far inferior in this respect to our own.

Sarracenias.—(Garden, xxx., pp. 366, 367; plate 566.)

Descriptions of the species, and of their numerous artificial hybrids, 15 of which are noted. The plate illustrates *S. Moorei* (*S. flava* × *S. Drummondii*) and *S. Popei* (*S. flava* × *S. rubra*).
Thalictrum.—*North American Species of*. William Trelease.

(Proc. Bost. Soc. Nat. Hist., xxiii., pp. 293-304; one plate and two cuts. Also reprinted.)

In this revision of our Meadow Rues, which may be regarded as preliminary to Dr. Gray's treatment of the genus in the Synoptical Flora, twelve species are recognized, as against fourteen enumerated by Dr. Watson in his Bibliographical Index, *T. anemonoides* being referred to *Anemonella*, Spach, and *T. Wrightii*, Gray, to a variety of *T. Fendleri*, Engelm. The *T. Cornuti* of Gray's Manual is referred to *T. polygamum*, Muhl., and Prof. Trelease finds that it is never glandular, so that all glandular plants of the polygamo-diœcious section appear to be referable to *T. purpurascens*, L.; the var. *ceriferum*, Austin, is only an extreme state of the species. In the vicinity of New York we have found that *T. purpurascens* generally blooms much earlier than *T. polygamum*, so that when the former has mature fruit, the latter is in its most conspicuous state in the swamps and meadows. *T. Kemense*, Fries, of Alaska, is reduced to *T. minus*, L., var. *Kemense*, and *T. Fendleri*, Engelm., var. *polycarpum*, Torr., is *T. polycarpum*, Watson. Prof. Trelease prefaces the systematic portion of his paper with a discussion of the structural features of the genus, and of the adaptation of the various species to insect or wind pollination.

Thistles. Grant Allen. (Pop. Sci. Month., xxx., pp. 101-108.)